Assignment 7

- BigData Week 7
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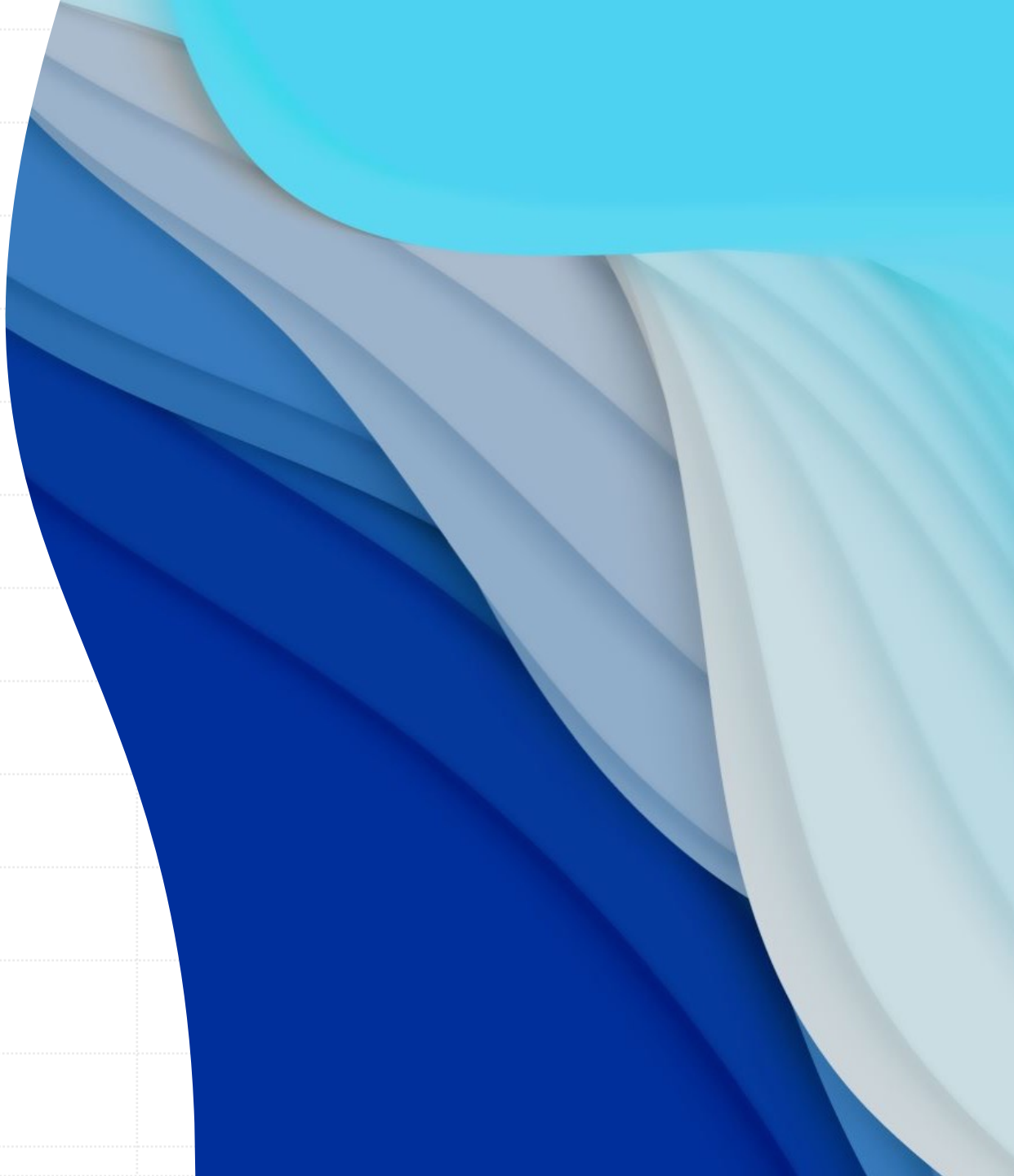


Assignment 7

- Submission due: April 23, 23:00 (Wed)
- What to submit: One Notebook file (.ipynb) + one csv files + one png file
  - Colab: [File]-[Download]-[Download .ipynb]
  - Kaggle: [File]-[Download Notebook]

Mission #1: Download the following five stock index information from Yahoo Finance and compare the changes.

- Target index & its ticker symbols

Index Name	Ticker Symbol
Nasdaq Composite Index	^IXIC
S&P 500 Index	^GSP
Dow Jones Industrial Average	^DJ
Shanghai Composite Index	000001.SS
KOSPI Index	^KS11

Mission #1: Download the following five stock index information from Yahoo Finance and compare the changes.

Download the target index value using the yfinance library.

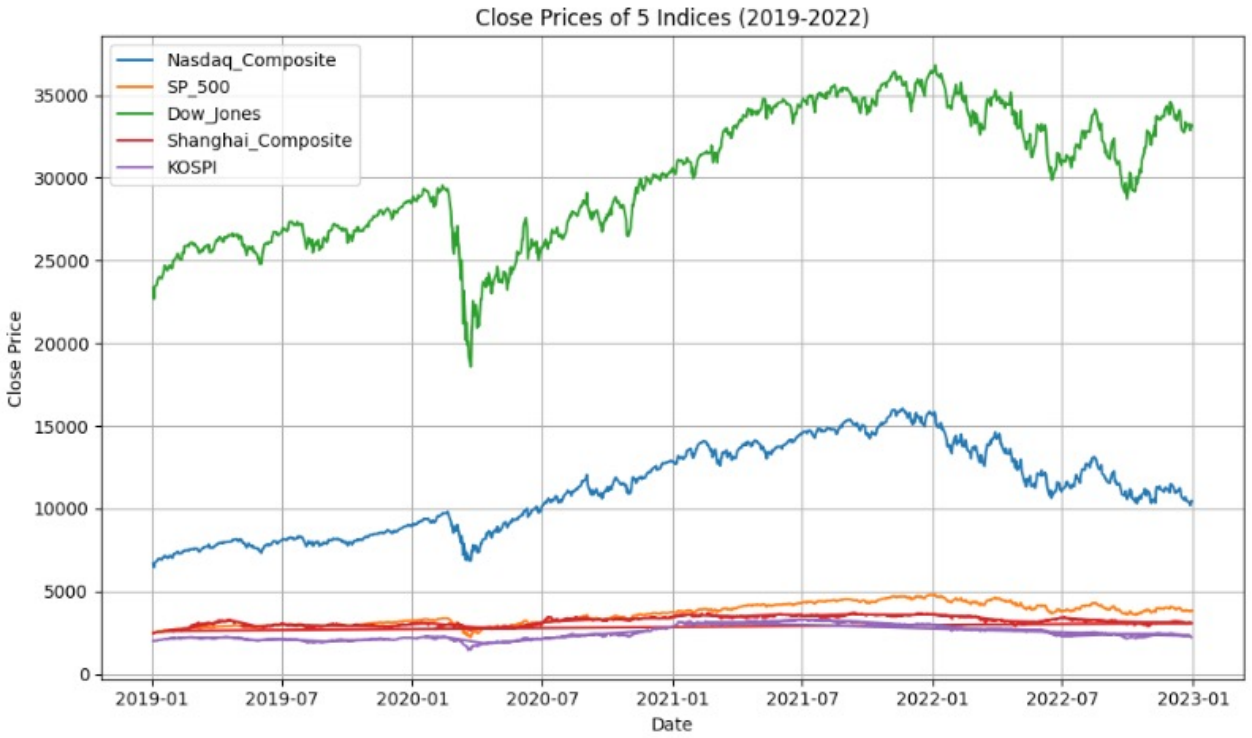
Each table is created in each database using Sqlite3. The collection period is 2019 to 2022 (DB name: indices_data.db).

Mission #2: After reading the values of the Close column from the DB Table, a CSV file is created by index and date.

1. Read the Close values from each created DB Table to create five different dataframes.
2. Read the values of the Close column from the data frames for each index and create one csv file consisting of the Close values by date and index.

	Date	Nasdaq_Composite	SP_500	Dow_Jones	Shanghai_Composite	KOSPI
1	2019-01-02 00:00:00	6665.93994140625	2510.030029296875	23346.240234375	2465.291015625	2010.0
2	2019-01-03 00:00:00	6463.5	2447.889892578125	22686.220703125	2464.363037109375	1993.699951171875
3	2019-01-04 00:00:00	6738.85986328125	2531.93994140625	23433.16015625	2514.867919921875	2010.25
4	2019-01-07 00:00:00	6823.47021484375	2549.68994140625	23531.349609375	2533.089111328125	2037.0999755859375
5	2019-01-08 00:00:00	6897.0	2574.409912109375	23787.44921875	2526.4619140625	2025.27001953125
6	2019-01-09 00:00:00	6957.080078125	2584.9599609375	23879.119140625	2544.344970703125	2064.7099609375

Mission #3: Read values from a csv file and plot them as a line graph with the values for 5 indices.



Hint!

```
import pandas as pd
import matplotlib.pyplot as plt

# Read the CSV file containing Close prices
df_close_combined = pd.read_csv('indices_close.csv',
index_col='Date', parse_dates=True)

# Plot the Close prices and save the plot as a PNG file
plt.figure(figsize=(10, 6))

# Plot each index's Close price
for column in df_close_combined.columns:
    plt.plot(df_close_combined.index,
df_close_combined[column], label=column)

# Set the title and labels
plt.title('Close Prices of 5 Indices (2019-2022)')
plt.xlabel('Date')
plt.ylabel('Close Price')
plt.legend(loc='upper left')
plt.grid(True)

# Save the plot as a PNG file
plt.tight_layout()
plt.savefig('indices_close_prices.png')
```

Final outputs to upload in LMS

- One Notebook file (.ipynb) + one csv files + one png file
- Name all the output files same as your 'your ID_family name'
  - 1234_ahn.ipynb
  - 1234_ahn.csv
  - 1234_ahn.png
- Please upload the three files compressed into a zip file.
  - 1234_ahn.zip ➔ Upload in LMS